

# Compostable Times

Issue 4

"All the news that's fit to recycle."

September 2006

## FRED'S FLIGHTS..

By Kip Baratoff '08

Meet Fred Nelson, an outspoken Maryland native. Complete with a manicured beard and typical receding widows peak common to the head of many a man hovering around thirty years old (myself included), Fred worked and lived in Tanzania for seven years before matriculating to the University of Michigan. He stands six feet four inches tall with a lean frame, keeps his hair cropped short a mere half inch from his scalp, and walks with a slow gait that allows him to soak in each moment. You can tell his actions are deliberate, yet he remains quietly spontaneous and open to all reasonable suggestions. Eager to cook a large meal with friends, enjoy laughter, talk shop or take five hours to tread one kilometer for good birding, Fred's zeal for life is only matched by the fierceness of his heart and mind. While such confidence and passion can be intimidating, especially when combined with his bluntness and size twelve Timberlands, I feel lucky to have him as my colleague and friend in Ann Arbor.

Fred's journey to East Africa began in earnest upon graduating from Cornell University. The road was windy, but eventually he landed a job with the Madison, Wisconsin



based Sand County Foundation, named for Aldo Leopold's Sand County Almanac. The almanac, published posthumously in the 1940s, helped foster dialogue about conservation and introduced the land ethic for which Aldo is famous: a relationship with the land is right when you maintain the biotic (read: flora, fauna, ecosystem, etc) of that land and wrong when you do not. Leopold hoped to merge this land ethic with human ethics. He believed and lived in a world (had his own farm in a region of Wisconsin nicknamed Sand County for its sandy soil) where farmer and land have a symbiotic relationship, both reaping rewards from the relationship, both getting rich. To Aldo, if either land or farmer grew poor then the relationship possessed a moral turpitude as repugnant as the sin you deride most.

Leopold's ethics battle on the center  
*Continued on page 7*

### In this issue:

Fred's Flights.....	1
Deans Stalk.....	2
Solar Powered Spotlight....	6
Bonus Interview.....	11
The Backside.....	12

### THE SOCIAL CORNER

Fall is here, hear the yell, back to school, you know the drill... So how do you make friends? Go to the annual SNRE camp-fire!!!

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<http://www.umich.edu/~snrestug/>

# The Deanstalk

## What's on Rosina's Radar...

Welcome back to SNRE!


It was a fun but whirlwind summer. Hundreds of former and current students bid a fond farewell to Professors Terry Brown and Burt Barnes in dual warm and wonderful celebrations as they enter their well-deserved retirements. These two professors truly helped define Landscape Architecture and Terrestrial Ecology, respectively, in SNRE. Students from more than 40 years ago came back to pay tribute to these great men and student scholarships were begun in both their names, to continue the legacy. Watch for their names appearing on two of the chairs in lecture room 1040 – their 'endowed chairs'!

In August, we welcomed our new provost, Teresa Sullivan, to the Dana Building, SNRE's home and also the greenest academic building in Michigan. She enjoyed a full day of visits to our labs and classrooms, and met with groups of faculty and students. Terry told me she has already shared with many others the information she learned about our use of recycled materials, our research on invasive species in the Great Lakes, and design of sustainability metrics.

Throughout the summer, I gave several public service lectures on aspects of climate change, including at the Earth Day celebration at Pioneer High School, the Aspen Ideas Festival, the National Leadership Summit on Energy and Climate Change at Wingspread (attached to a building built by Frank Lloyd Wright), the Adult Learning Institute at Oakland Community College, the U.S. Green Buildings Council, a consortium of Midwest Foundations, and the Aspen Center for Physics. I also sat down with every one of our faculty members for an hour this summer to discuss teaching, publications and research; it was wonderful to see the depth and breadth of our scholarship.

During visits to Washington, D.C., I met with several members of our Michigan congressional delegation as well as other key figures in the Congress and federal agencies to keep them informed about our expertise. The new VP for Research here on campus, Steve Forrest, asked me to serve on a search committee for his Washington-based assistant this summer; he recently announced that he selected Sarah Walkling, a experienced Hill staffer who spent 4 years representing Vanderbilt University in D.C. (I wonder who she was rooting for this past weekend?!).

I continue to serve on the Board on Atmospheric Sciences and Climate of the National Academy of Sciences, and am author on two draft reports – one on the lessons learned from the various national and international assessments conducted on climate change, and a second on research needs to understand the impact of multiple environmental stresses on socioeconomic and natural systems. My role as Vice-Chair of the United Nations Scientific Expert Group



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# The Deanstalk

on Mitigation and Adaptation to Climate Change is nearing completion, and we hope to submit our report for the Commission on Sustainable Development in time for the next Climate "Conference of Parties" meeting in Nairobi in early November. On September 19-21, I'll be one of a handful of invited academics, along with many CEOs and NGOs, participating in the Clinton Global Initiative discussions on poverty and climate change in New York (<http://www.clintonglobalinitiative.org>). There I will highlight SNRE's work on sustainability and promise to hold the first "National Summit on Coping with Climate Change" in the next year. Provost Sullivan has charged me to expand the mission of climate change during my second term as Dean, and I look forward to doing that both within SNRE and across campus. I will be soliciting your ideas on the conference and on ways to enhance climate change discussions in the coming months.

Ann Boyd-Stewart, our new Director of Development, will be inviting students to speak with donors at various events this year, as we seek to increase our funding for student scholarships.

In faculty news, with more than \$7 million in large-scale, multidisciplinary grants, and the demands of serving as both the Director of Michigan Sea Grant and Interim Director of CILER in addition to his duties as Associate Dean for Research, Don Scavia reluctantly concluded that he had too many responsibilities competing for his time and that he needed to relinquish his service role as RAD. Professor Dan Brown began as the School's new Associate Dean for Research on September 1. (See Dan's first *Compostable Times* article in this issue.) I am also pleased that Jim Diana agreed to serve another year as our Associate Dean for Academic Affairs.

In late May, Maria Carmen Lemos and Bill Currie were granted tenure and Dan Brown, Ted Parson, and Ivette Perfecto were promoted to full professor by the Board of Regents. Dean Bavington, our first Michigan Fellow, married Jodi and we welcome her to the United States.

We will again have a Dean's Speaker Series this year. For the fall we have Dirk Wascher, Network Coordinator for Landscape Europe, Partnership for European Environmental Research, as our JJR lecturer on

October 12; Martin Cargas, VP for Government Affairs at Anheuser-Busch International and an SNRE alum, as our homecoming speaker on October 26; and Sir John Browne, Group Chief Executive for BP Global, as our Wege lecturer on November 14.

This year will be exciting as we continue to grow our Great Lakes presence, participate in the new OVPR Energy Initiative, work with the Graham Institute to promote sustainability, and bring additional attention to climate change.

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## Jim's Journeys

Wow, did this summer go by fast! For me, it was a combination of writing papers, attending conferences, and sustaining student research. Most of what I do during the summer is more typical of regular faculty work than of administration. This summer, it also included editing and approving theses by two of my students.

My summer started in May by attending the annual meeting of the World Aquaculture Society in Florence, Italy. I presented a paper on prawn culture in Thailand and visited many interesting sites in Florence and Rome. One evening during the trip, my wife and I were walking near "El Duomo" when someone asked if I was Professor Diana and introduced herself and her friends as students who took my ENV 201 Ecological Issues course last fall. They were studying abroad in Italy. Of all places to randomly encounter UM students! We also had dinner with one of my graduate students, Katie Lord, and her husband, who were on their honeymoon in Italy.

In June, I was invited to present a paper in the Dominican Republic on the influences of aquaculture on biodiversity, as part of a biodiversity and agriculture conference sponsored by U.S. Agency for International Development. Once again, the global nature of our students surfaced, as another former student in ENV 201 approached me on the flight, telling me she was going to teach English in a poverty-stricken school in Central America. After the conference, I produced a

*Continued on next page...*

# The Deanstalk

*Jim's Journeys continued from page 3...*

paper from my talk, to be submitted to Conservation Biology.

In July, I was invited to attend the Second Conference on Cage Culture in Asia, held in Hangzhou, China. By this time, I was tiring of international travel, but the conference was good, and the visit to China interesting. At that meeting, I reported on a technology that my colleagues and I developed that uses cages in ponds for a combined integrated system to grow fed and fertilized fish in the same pond.

In August, I worked on a paper on management of northern pike in Michigan, to be presented at the annual meeting of the American Fisheries Society in September in Lake Placid. By that time, my students and colleagues will be tired of hearing from me! I participated in far more conferences and far less research trips this year than in recent ones, but it has been a productive summer, nonetheless.

Finally, August led to a vacation in northern Michigan and then a series of SNRE events also up north, where I am writing this while attending Burt Barnes's retirement event at the Biological Station. I will be here through our graduate student orientation, and will return on Friday just before Labor Day weekend and the start of classes.

This should be an exciting fall. SNRE will be entering the first master's cohort to enroll in the three core courses and to hopefully have a more focused and collegial curriculum to motivate them. The changes in curriculum not only make it more rigorous, but put students from all disciplines together in three courses, which allows them the opportunity to become more familiar with one another. SNRE is sponsoring a series of fun events this fall, including the fall campfire

at Saginaw Forest, a number of outstanding outside speakers visiting Ann Arbor, and of course, our exciting courses and research. It should be fun!

Most students find their four years of undergraduate and two to seven years of graduate school among the best times of their lives. I know I felt that way, too. I have had the privilege of being associated with that life for an additional 27 years now, watching students like you come into the system, be awakened to new fields and new possibilities, and eventually graduate and move on to do great things in the world. It is indeed a special position, and SNRE is a special place to accomplish it.

## DAN THE MAN IS BACK!!!

This semester I am back in SNRE full-time following a wonderful sabbatical leave last year. During that year I was on five different continents for various research and research-related activities. I participated in various workshops, mostly related to spatial modeling and analysis of coupled human-natural systems. One, funded by the National Science Foundation, aimed to improve interdisciplinary collaboration in East Africa. It was held in a beachfront resort near Dar es Salaam in Tanzania. Another was funded by the National Institutes of Health to help map out modeling needs and directions in population-environment research. That one was held at the East-West Center in Honolulu. Another was funded by the US Geological Survey to investigate needs and opportunities for undertaking a national-scale land-use modeling activity. For that one, we met a field station of Colorado State University just off the northern border of Rocky Mountain National Park at 9,000 feet. A picture begins to emerge of (a) the kinds of things I've been thinking about, and (b) the kinds I've places I've been to think about them.

In addition to these and other meetings, we have started a research project in central China, looking at how the vulnerability of communities to flooding is influenced by land-use and land-use-related practices and policies. The site is around Poyang Lake, in Jiangxi Province, which is the largest freshwater lake in China and is connected with the Yangtze River (or Chang Jiang). The project also includes investigating the influence

*Continued on next page...*

Looking for something cool do do in all that free time you have? Check out the links page of the student gov website for ideas of cool weekend trips. Just go to <http://www.umich.edu/~snrestug/>

# The Deanstalk

of these dynamics on bird habitat. The lake is a major wintering spot for several water-bird species. I have made several trips to China to get the field aspects of that project underway.

Alas, my sabbatical is over. But, not only that, I began my term as Associate Dean for Research on September 1<sup>st</sup>. Needless to say, this will take some getting used to. The transition is somewhat easier than it might be, though, given the wonderful work Don Scavia has done as the School's first Associate Dean for Research. He has done great work in improving the ways in which we communicate our research activities to each other and to the broader university and science communities, including the creation of our first publications data base and the facelift to our web site last year. He has worked with the Research Committee to identify ways to improve our ability to identify and respond to interdisciplinary research opportunities, created a new cohort or Great Lakes Research Investigators, and established a fund to help stimulate new and exciting interdisciplinary research. He has also identified ways to improve the infrastructure and financial resources to make the research enterprise more productive. But, he has been so successful in securing funds for 3 new multi-institutional Great Lakes and coastal marine research projects that he has decided it was necessary to step out of one of his several administrative positions. In addition to teaching and research, he will remain Director of Michigan Sea Grant and Interim Director of the Cooperative Institute for Limnology and Ecosystems Research.

You may be wondering what good all this work on research is for students. Here is my take on three ways that the research and education activities of the school complement and strengthen each other (surely there are others). First, in a time of relatively scarce state funding for the university and rising tuition costs, research funds represent a critical element of funding for graduate students. In any given term, we estimate that at least half of the funds that graduate students get is in the form of research support (i.e., GSRAs or hourly). We would not be able to provide most of this support without the external grants for the research we are doing. Additionally, by engaging in research with our world-class faculty, students at all levels, from a first-year undergraduate participating in the Undergraduate



*Photo of the New Zealand Dunes by Jenn Dowdell LA '06*

Research Opportunities Program up through the most advanced PhD student, have the opportunity to use state-of-the methods, work on the latest equipment, travel to far-flung field sites, and interact and learn from each other and from national and international scientific and practitioner networks. Finally, by attempting to bring the disparate sets of expertise on our faculty to bear on complex environmental questions and problems, we create an exciting and intellectually stimulating environment where students and faculty alike can benefit from intense exchanges of ideas, both within and outside the School. That, after all, is what's so fun about being in a University environment.

I am still learning the full scope of my administrative duties in this new position, and look forward to learning more about the work that goes on within the walls of Dana (and elsewhere). I will be striving, together with Rosina and Jim and the research committee, to support faculty and students in their research, in securing the funds they need to do it, and in identifying new and exciting frontiers that will benefit the school, our students, and, ultimately, our collective understanding of natural resources and environment. Let me know if you have any suggestions.



**SOLAR**

**POWERED**

**SPOTLIGHT**

## Interview with Ivette *"faster than a Corvette"* Perfecto

by Kerry Duggan '06

### What did you do this summer?

I was in Chiapas, Southern Mexico doing research.

The general theme of my research is how agriculture is related to biodiversity conservation, and how both are related to social justice.

Over the last 10 years I have been doing research on shade grown coffee – a very diverse production system that can combine economic and conservation goals, it provides livelihoods for farmers and also conserve biodiversity.

In recent years we have focused on the function of biodiversity in other words, in the way that biodiversity can help in the productivity and sustainability of the farm.

However, in addition to the more applied research on the function of biodiversity we are also conducting some basic ecological research spatial ecology using the coffee agro ecosystem as a model system. We have a 45-hectar plot in a shaded organic coffee farm in Chiapas, Mexico.

We use this large plot to investigate how local level multi-species interactions can generate spatial pattern at the landscape level and what are the consequences of these spatial patterns for the pest and diseases of coffee. The system that we are studying is characterized by a mutualism between a dominant ant species and a scale insect.



The ant protects the scales from their natural enemies and in exchange, they get honeydew from the scale. That means that the scale, which is a potential pest of coffee, is very abundant only where the ant is nesting, because outside these areas a ladybird beetle controls them. But its own natural enemies, resulting in the ant having a clumped distribution, also control the ant. An interesting twist of the story is the larvae of the ladybird beetle are covered with waxy filaments that protect it from the harassment of the ants. Therefore, the areas with ants are a high quality habitat for the beetle larvae because there is a high density of their prey (the scales) and they themselves get protection from their natural enemies unintentionally by the harassment actions of the ants. This means that the areas with ants provide refuge for the beetle that is the main predator of the scales. Because of the presence of the ants, the beetle can control the scales in the rest of the plantation.

This is an example of how the spatial ecology works in this agro ecosystem to regulate insect pests. Several of my graduate students have conducted their research projects in the coffee agro ecosystem in Mexico.

This summer 2 of my masters students came to Mexico with me to conduct their thesis research

Casey Taylor studied the impact of agricultural intensification (i.e.. reduced levels of shade in coffee farms) on bird foraging behavior; foraging behavior and Katie Goodall studied the impact of intensification on ectoparasite of birds.

Kim Williams-Guillen, a new post-doctoral fellow in SNRE, also came to Mexico this summer to start her research on the diversity and density of bats and their functional role in the regulation of arthropods, especially herbivores.

**SOLAR**

**POWERED**

**SPOTLIGHT**

Working along with only two mist nets in 9 trapping nights she capture almost 450 bats in two coffee farms.

There are a lot of bats in the shaded coffee farms in Chiapas.

In addition to the graduate students and the post doc three undergraduate students joined us this summer.

They came to help with the field-work but soon they came up with their own research project the species of the tree where the ants are nesting influenced the number of scales that the ants tend in coffee. So they conducted several experiments to examine this and are now writing a paper for publication. I am also encouraging them to submit an abstract to the next annual meeting of the Ecological Society of America.

### **Did you have any fun this summer?**

We had lots of fun. We had a picnic one day, for the picnic we went to another farm. A nice river and a camping area. There were 15-17 people. Faculty, postdocs, grad students, undergrad...and field workers and their families.

### **What about your participation in the ESA meetings?**

In early August I went to the ESA meetings in Memphis. I am happy to report that ESA is now broadening to include env and social justice. I participated in an Environmental justice symposium and also in an organized oral section on biodiversity and poverty. In my presentation I talked about the proverbial "elephant in the living room:" excessive wealth and greed. You have

all of these conservation biologist and conservation organizations in Latin America working with the poor to help them conserve biodiversity. Everybody is now talking about the relationship between biodiversity and poverty, but nobody wants to address the issue of how greed and excessive wealth affects biodiversity. My point is that you can not ignore the fact that while most farmers in Latin America are trying to feed their families and make a living on less than 5 hectares, right next door there are 50,000, 100,000 and even half a million hectare farms that belong to a few rich individuals or corporations. In my opinion, conservation biologist should be joining forces with the MST (Landless Workers Movement) of Brazil, Via Campesina, and other progressive social movements in the Third World rather than with so called "poverty alleviation programs" supported by the World Bank and other international financial institutions.

### **What classes will you be teaching this fall?**

This fall I will be teaching Field Ecology (NRE 455), the "weekend course." It's a lot of fun. We go to the E.S. George Reserve, about 40 minutes from Ann Arbor, from Friday evening to Sunday evening. We do many field problems, each directed by a different faculty member from EEB or SNRE and by John Vandermeer and I.

I am also teaching Our Common Future, ENVIRON 270. That course is about the impact of globalization on the environment and people in the Third World. I am looking forward to meeting the new students this year.

### *Fred's Flights*

*continued from page 1...*

stage of the academic debate surrounding the tension between our species' growth in population, wealth and technological riches and the consequent rising pressure on the resources of our home, planet Earth. Fred battles on the front line, in the trenches, where the intangible debate takes form and impacts life. He works with the Masai, pastoralists in Tanzania, and he works with the Elephant, Lion and Kori Bustard (largest bird in the world that can fly), some of East Africa's most prized fauna. With Leopold as armor and community based conservation as his weapon, Fred strives to unite the forces of modern development and indigenous cultural norms in order to protect natural resources.

Community based conservation ("CBC") can take many forms and be difficult to implement effectively. Each distinct brand is particular to the stakeholders (both human and animal) and resources present. Peculiar to Fred's brand of CBC in Tanzania is how he uses private markets to achieve objectives usually targeted by public sector and non-profit funding or by rabid environmentalists. The counterintuitive strategy utilizes the best of business practices to protect the land while enriching the surrounding communities. Revisiting Leopold, we remember that the farmer and the land must grow richer together. Extrapolating from here we understand that conservation is much more than quarantining nature to national parks or some such other specially  
*Continued on next page...*

# Random Ramblings

*Fred's Flights*

*continued from page 1...*

designated boundary.

I have spent the last two days enjoying the fruits of Fred's unique strategy in the Masai village of Sinya on the Western slopes of Mt. Kilimanjaro, the largest freestanding mountain in the world. His modesty would say that Tanzania's Natural Resource Forum ("TNRF"), which he established under the auspices of the Sand County Foundation, was more responsible than he, but the Masai I met express a fulsome gratitude for Fred that betrays his humility.

The Masai possess the wisdom only acquired by living with the land. While we do live off the land in our Western worlds, some argue that our pre-packaged and processed experience is nearly the equivalent of the third derivative of a second order equation. My values tend to not pendulum at such extremes or dabble in such hyperbole, but I would be dishonest to not reveal my infatuation with nature and more than occasional dream of a simpler family life with my wife and kids in the mountains. Whether or not I realize that dream, which sometimes includes owning my own goat, the Masai live it every day.

As pastoralists, the Masai way of life revolves around herding livestock. Clearly distinct from the itinerant life of the nomad and the inert existence of the agriculturalist, the Masai's movement and settlement patterns are governed by a seasonal following of grazing lands within a set region. This process is called transhumance.

Within the region there is a central village used for schooling, meetings and the like. Scattered throughout the community's land exist a series of bomas (bow-muh(s)). The Masai practice polygamy, and thus each boma is organized around one head male and consists of a series of mud huts with thatched roofs, one for each wife and perhaps one for an extended family member, such as a mother or younger brother. A thick barrier of dead acacia branches creates a circular perimeter around the huts. The diameter of these barriers varies with the size of the



boma and can be anywhere from 25 meters to 50 meters.

Social structure within the Masai community is ordered by male "age-sets" and consensus decision making processes. Every seven years all male children between the ages of twelve and nineteen are circumcised to become marani, warriors of the village. Each age-set then selects a lagwanani, the leader of the age-set who has the responsibility for resolving conflicts,

providing advice and expressing the voice of the age-set. As new age-sets come into existence, marani eventually transition into elders, where they take wives and create a family. It is important to note that multiple age-sets of marani, older and younger, exist at once, but the members of the newest age-set are the true warriors of the community. They will carry spears and paint their face red with dye from okra. The marani represent the strength of the community and the elders represent the experience. Given the consensus based decision making process, tension can exist between elders and marani.

The women do not have age-sets. Slightly post puberty females are circumcised and then married for a dowry, usually in the form of cattle, paid by the male. Upon marriage they take care of the family. As such, they exist largely as a form of currency within Masai society for their family and then later for their husband. Their voice is often relegated to expression only within the household and singing during celebrations, which accompany all births, marriages and circumcision rituals.

Fred has worked with Masai communities for seven years. The Sinya village we visited lies nestled behind the Seven Sisters, an unlikely protrusion of granite and quartz in a sea of volcanic rock that forms the unimaginable mass of Mt. Kilimanjaro. These islands of igneous rock seem out of place in a landscape dotted with hundreds of Kili's natural volcanic vents. Equally out of place is an old diesel Land Cruiser full of three wazungu



# Random Ramblings

("whites") from America bouncing along thirty-five kilometers of dirt roads that would gobble up anything but the heartiest of 4x4s. But, over an hour later when we stepped out of the dust covered car pleased that our duct tape and towel contrivance to seal the broken back door had actually limited our inhalation of particulate matter, our smiles were greeted with equally warm smiles from the villagers. They all knew Fred.

Our smiles did not last long. Apparently, Northern Hunting was in the old Elephant Camp with clients. Granted a concession by the Wildlife Management Division ("WMD") of the Ministry of Natural Resources & Tourism, Northern Hunting benefited as the central government of Tanzania usurped the property rights of Sinya. Since the chairman of the village had left for Dar es Salaam to press the village rights, we piled into the truck with some Masai to off-road around the Seven Sisters in search of the village executive officer. The titles of chairman and executive officer represent adaptations the Masai have made to the concepts of nation-state and legal rights that have been pressed upon them in the post-colonial era. In other words, the village was customary long before it became statutory.

A few hundred bumps later we reached the executive officer's boma. He was having a party. Upon our arrival, he hopped in the truck and we went back to the central village. After a brief ultimate (frisbee) lesson for some of the kids while Fred did some work with the executive officer, Matt and I smiled

again. Fred had returned with good news. We were still going to go camping.

As we drove away from the base of Kili and out into the vast flat expanse of acacia savanna things began to make sense. Fred's work consisted of helping Sinya secure their property rights and helping them formulate a plan for using these rights. This land was there land. Property rights allowed them to extract monetary value from it by granting concessions to safari tour operators or hunters that lease the right to use the land. By 2004 this concept had earned the village over US\$40,000, whereas in 1998, when Fred arrived, they were only yielding US\$1,000. Some of this capital enabled the village to build a new school. Furthermore, the tourism also allowed the village women to sell their beadwork, earning an income independent of their husbands. Unfortunately, these developments came to an abrupt halt in 2005 when WMD granted a concession of Sinya land, the Elephant Camp, to Northern Hunting. Suddenly, the village was making no money, the coffers were empty in 2005, and hunters began roaming their lands. The key issue at stake: land tenure and game tenure are separate. Sinya owns the land, but not the roaming animals. Thus, WMD feels granting hunting concessions is within its purview.

In a free market with proper allocation of property rights, Sinya should be able to decide who it grants concessions. Enter Fred and the work of TNRF and the

Sand County Foundation. The issue is not about hunting versus safari operators, as hunting can be just as lucrative as safari tourism, but about Sinya's rights to use the land as they see fit. The village chairman traveled a long fifteen hours to Dar es Salaam to argue for his village's property rights. After all, the central government that was usurping these rights was the same central government that granted the rights in the first place.

At this point, Aldo Leopold would of course be wondering about the land. Clearly, the Masai, the farmer in this case, can and did grow richer from their relationship with the land until the WMD – Northern Hunting debacle. But, what of the land, has it grown any richer? Would the land experience different growth if Sinya granted concessions to hunters versus safari tour operators? The answer to the latter question rests with the wisdom of the Masai that I spoke of earlier. As pastoralists, Masai have natural incentives to manage land in a sustainable fashion; their livelihood depends on the perpetuity of grazing lands, as it has for over a thousand years. This concept, along with property rights, lies at the heart of Fred's community based conservation strategies. Together, property rights and natural incentives make the choice between hunter and safari operator less relevant for the Masai, since both options can be managed in harmony with the land, albeit via different methods. The choice is a matter of preference, like any private market transaction.

The answer to the first question

# Random Ramblings

is far less complicated and lies in Northern Hunting's and the safari tour operators' interest in the lands. They come for game. As we drove away from the base of Kili, seeing this game is really what helped me make sense of Fred's work and the village chairman's absence. It explained why a private market existed. Just one word: biodiversity.

As I contemplated these dense issues, we drove deeper into the acacia savanna hurdling bumps the size of cliffs. Our truck's struts and shocks probably hated us, and I was sure that they were going to lodge a complaint at any moment. Any reasonable piece of machinery surely would have given up by now. Yet, their resolve appeared no less resilient than the awe inspiring landscape we drove through. Acacia fanned out across the horizon, their thin trunks giving birth to a cornucopia of branches full of short deep-green leaves that, depending on the species, formed the shape of an umbrella or tabletop. I guess there is a reason these trees grace the cover of many coffee table books, standing as solitary soldiers under the setting sun.

The acacia's unique branch pattern is partially an evolutionary response to the long neck of the giraffe and the remarkable reach of an African Bull Elephant's trunk. Hungry, these magnificent creatures feed on the acacia and other brush. We saw nearly twenty-five Giraffe on our short game drive. I am not sure what was more impressive, the nape of a six foot neck or the size of an eighteen inch tongue. The

Giraffe is the tallest mammal in the world and the largest of all ruminant ungulates (think cattle). Ungulates are mammals with hooves instead of claws. Ruminants have complex stomachs complete with fermentation and regurgitation chambers that allow them to extract more nutrients per meal than their non-ruminant friends, such as the Zebra.

By the time we had seen our first giraffe I was overwhelmed. The number of artiodactyls (even-toed ungulates) we had seen was astounding. Like the Giraffe, antelopes also have an even number of toes (think deer print...it leaves two hoof marks). Antelopes are bovids, ruminants with hollow un-branched permanently attached horns. They just seem to run a whole lot faster than most of their bovid cousins – sheeps, goats and cattle.

The grace of a racing Impala is a breathtaking site. It is hard to describe the swift nature of these creatures with twenty-five inch S-shaped horns on top of their heads, they dart much like a school of fish save one important difference. Impala can leap over tall acacia brush and smaller trees in a single bound, making any circus acrobat jealous.

The Gerenuk is similar to the Impala, yet it is from the Gazelle tribe of bovids, and a much rarer type of antelope. While you are sure to see Impala on acacia savanna, the Gerenuk's two-tone torso is harder to spot, despite being taller. The long neck and narrow head make

the vivid black and white coloring in the centre of its large rounded ears a near comical site. The only thing similar is Dill in the film version of *To Kill a Mockingbird*. Jem loved his friend despite his goofy ears. The Gerenuk's ears are orders of magnitude larger and stick out that much further from a far narrower head.

Like the Gerenuk, the Thomson's Gazelle and Grant's Gazelle are also from the Gazelle tribe of bovids. The Thomson's Gazelle is the common small gazelle of the African plains. Smartly adapted to its open environment, the "Tommy" relies on its speed to outrun predators. The cinnamon colored body and head are marked by bold black side stripes and facial marks. Grant's Gazelle are much larger and are tanner than their Thomson's cousins. The Grant's is easily spotted by the all-white underpants it wears. The Masai called them "white bottoms" in Kiswahili. If you miss that, you can always look for thick and strongly ridged twenty to thirty inch horns.

As I watched a Thomson's Gazelle soar over a barrier of green bush, I heard the word I had longed to hear since I stepped foot on the African continent. "Elephant." My head shot left and out the window of the car I saw a grey blob in the distance. Indistinguishable from so far away, it just looked like one of those blurry censor dots used to obfuscate the identity of a person. The grey dot was rather conspicuously concealing a section of the green canopy that dotted the edge of my sight line. My heart

# Random Ramblings

skipped a beat.

When you are in the presence of African Elephants you surely recognize the majesty of Mother Nature. Borrowing from the National Audubon Society Field Guide to African Wildlife:

Imagine a creature as big as a truck, with a nose as long as its legs that functions as a siphon, snorkel (on deep-water crossings), squirt-gun, trumpet, and feeding tool powerful enough to rip branches from trees but delicate enough, with finger-like projections at the tip, to pick up a pea.

Mother Nature did not stop with the nose. The elephant's ears, which look like giant sails, act as a cooling system for the giant mammal prone to overheating. The tusks of a sixty year old male weigh in at one hundred and thirty pounds. Social units are dominated by the biggest and oldest female cow, but include nine to eleven females and their calves. Bulls leave the herds at twelve, right at puberty, and live their awkward teenage years congregating with other males and taking long solo journeys to discover themselves. At twenty-five, their libido kicks into overdrive and all they do is eat and competitively reproduce.

As we drove over the volcanic pan towards the grey splotch I was awash with endorphins. I would finally get to meet Dumbo and his mom. We turned the truck off and sat quietly fifteen feet from two calves and four

cows having an afternoon snack. Later we found some bulls tearing apart an acacia tree and we sat and watched them too. But, when we stood on top of a hill in Kenya, just over the boarder from Tanzania, and spotted a herd of over seventy elephants I felt feelings I only feel when I climb. I felt connected to the serenity and balance of earth. I felt like home.

At this point in our drive we had also seen Vervet Monkeys, Zebra and Wildebeest, hundreds to be more precise. We also had seen countless species of birds and were still to see more. Here is a brief list: White-backed Vultures, Ruppell's Griffon Vultures, Crowned Cranes, Marabou Storks, Superb Starlings, African Fish Eagles, Brown-snake Eagles, Tawny Eagles, Yellow Bishops, Goshawks, Pygmy Falcons, Black-winged Stilts, Egyptian Geese, Chestnut-bellied Sand Grouse, Crested Bustards, Kori Bustards, White-bellied Bustards, Black-headed Heron, Grey Heron, Cape-Teal Least Grebes, Secretary Birds, White-bellied Go-Away-Birds, White-headed Buffalo Weavers, and Ostriches.

Yes, biodiversity at its finest. The land certainly had grown rich. To be sure, some of this fauna had roamed Sinya land long before Fred came along. Weather and

topography, the harbinger of water sources, also contributes to the diversity. However, he created an environment where the animals could thrive. Property rights for locals helps eliminate poaching and provides a sanctuary for wildlife. Antelopes, like the Lesser



Fred with the Masai

Kudu, with thick spiraled horns can flourish.

Perhaps the best testament to the land's newfound richness was the mighty roar of the Simba. Panthera leo, a robust cat, lives in prides of two to forty. The thunder emanating from their jaws filled the darkness and our campsite as we cooked our chicken in the Sinya village game scout camp. A hush silenced the six Masai we were with, "Simba," was the only whisper we heard. Lions had recently moved into the area, indicating that the prey base was large enough to support the appetite of this mighty predator. Fred's face glowed. His lips stretched into the widest smile I have ever seen him make. His hard work had just been validated with gratitude from the top of the food chain as it marked its new territory.





# **SNRE'S UNDERCOVER POWER COUPLE:**

## **AN INTERVIEW WITH MARYCAROL AND MARK HUNTER BY KERRY DUGGAN**

As we sit -- more like squeeze -- into a booth at Red Hawk on State Street, Aquatics/REM Representative Daniel Fishman and RPB Representative Kerry Duggan await their fourth, fashion expert and Jazz guitarist, Mark Hunter. While we wait, we lean into self-admitted-never-been-tipped-in-a-kayak MaryCarol Hunter about her research interests.

An easy conversationalist, MaryCarol describes her two-pronged research. The USDA Forest Service has charged her to evaluate the social, ecological and economic impact of the loss of Ash trees on Ann Arbor. To date, at least 10,000 ash trees have been downed in the city. What MaryCarol will look at are the health effects on sense of place, psychology, habitat, gardens, heating and cooling bills and views. From a systems perspective, using a biodiversity index, MaryCarol will look at the areas where stumps are being removed. From her preliminary findings, she's uncovered a small and shrinking group of residents willing to pay to save their trees. One of the more telling features of this fact is that adults are found crying because of the loss of their trees. Certainly, this will cross many disciplines within the SNRE community. Part deux of her research is on the development of therapeutic spaces for stress reduction. She is currently participating in the UM Med School's Faculty

Scholars Program in Integrative Medicine.

It's noteworthy that she has yet to meet many graduate students. How is that possible, we asked? Although she began teaching the minute she arrived, it was a civil engineering course for the first year LAs. MaryCarol will teach that along with a new seminar in Sustainable Site Design this winter term.

An LA professor, MaryCarol's teaching and research interests include ecology, engineering and art. What you might not know about MaryCarol is her passion for gothic clothing. Ask her about it. While up at the U-M Biostation, some of the first year SNerds got a taste of MaryCarol during the "Greening of the Biostation" excursion along with Andy Hoffman.

Mark Hunter, the more reserved of the POWER COUPLE, will probably not soon be forgotten for his guitar and crooning during the SNRE orientation. Although not his primary genre, Mark enjoys playing Jazz. His research interests are in population ecology, particularly of insects that feed on plants. He is also interested in ecosystem modeling and the processes of carbon & nitrogen cycling in soils. You may recognize the construction on the diag side of Dana...well, that's Mark. With his 50/50 appointment in both SNRE and EEB, he's sure making his habitat, well, home.

At the moment Mark is passionate about junting down milkweed species of every type. "We can be dressed up going somewhere and he'll pull over on an interstate cloverleaf (dangerous in traffic), hop out and haul a handful of the dripping part bits back into the car," says MaryCarol. What a couple!

Now onto what we really want to know...how did SNRE's latest faculty power couple meet? I quote, "I picked him up at an airport". Now, if her research interests weren't an inspiration, I'd say her social porous certainly is.

What impresses MaryCarol: largest collection of really interesting people. People are excited about what they're doing. Particularly, the graduate students in SNRE are more interested in "getting there" than other students she's met along her academic road.

MCH & MH's favorite Ann Arbor Restaurant is Totoro for lunch and Bella Ciao for dinner (especially after Italy won the World Cup).

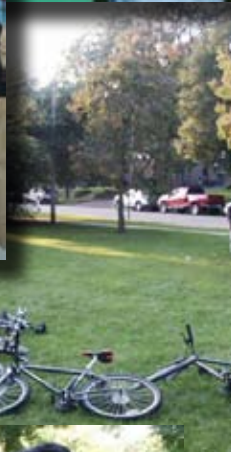
Let's extend a warm welcome to our newest additions in SNRE -- well, they've been here since January, but stop in and say hi anyhow.

*Got something you want  
to say? Send it to:  
[SNREnewsletter@umich.edu](mailto:SNREnewsletter@umich.edu)*



# THE BACKSIDE

**Photos from the last SNRE happy hour.  
Now you wish you hadn't stayed in the lab  
with the worms?**



**MY GOD!!**



So this ship (I'm leaving out the name so it isn't too easy) is mighty beautiful, but she ain't the most fuel efficient. So, the question of the month is, how far does it travel for each gallon of fuel she burns? Closest correct answer by next happy hour gets a free beer!! Send answers to [SNREnewsletter@umich.edu](mailto:SNREnewsletter@umich.edu)